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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,180

04/04/2005

Go Nagaya

5597

23373 7590 09/19/2008
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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

09/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,180

Applicant(s)

NAGAYA, GO

Examiner

Frank B. Vanaman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 10, 2008 has been entered.

Status of Claims

2. Claims 1-6 remain pending.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 3,472,331) in view of Iizuka et al. (US 5,224,563). Baker et al. teach an arrangement for the driving of a steerable wheel (42) including a first knuckle (top end of 22) which does not turn and is locked in a steering direction, and which is connected to an overall suspension member (suspension yoke 14: see col. 3, line 3) and to a non-rotating vehicle portion and which supports, in a non-steered configuration, a drive assembly (12, 16) a second knuckle (19, 21, 82, 85) which is steerable, pivotally mounted with respect to the first knuckle about a king pin axis (Y), the arrangement additionally fitted with a braking arrangement (56, 58), wherein drive force is provided to the wheel hub through a mechanical arrangement including a flexible constant velocity joint (26) having a center (C) along the king pin axis (Y) and including two direct moving portions (e.g., 20 and 28) connected to one another by a pair of joint portions (orthogonal to one another) such that the axes of movement intersect at the center (C). The reference to Baker et al. fails to teach the drive source as comprising a motor. Iizuka et al. teach that it is well known to provide the steerable wheels of a vehicle (23, see top of figure 5) with drive motors. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a motor drive as taught by Iizuka et al. for driving the wheels of the vehicle taught by Baker et al. with the non-moving portion

of the motor connected to the non-steered portion of the vehicle frame (as also suggested by Iizuka et al.), for the purpose of reducing or eliminating emissions in city driving scenarios.

As regards the provision of a steering rod for rotating the steerable portions with respect to the non-steerable portions, in that (a) Baker et al. teach an arrangement for a steerable wheel and (b) it is very well known in the vehicle arts to connect a steering rod to a pivoting wheel support to allow the wheel to be steered, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a steering rod connected to the second knuckle portion in order to allow the wheel to be steered.

5. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. in view of Iizuka et al. and Nelson (US 3,468,389). The references to Baker et al. and Iizuka et al. are discussed above and fail to teach the connection of the motor to the non-steered knuckle portion by an elastic body or damper, and 'direct-moving guides' in vertical and horizontal directions. Nelson teaches an old and well known arrangement for mounting a motor in a vehicle drive arrangement, wherein a motor (12) is mounted to non-steered portions of a vehicle (e.g., 62, 67) with plural resilient bushing elements (44, 46) and direct moving guide portions (50) being separately oriented in horizontal (58) and vertical (52) orientations and being provided with further resilient buffer members (36, 36, 37, 37). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mounting of the motor drive connected to the non-steered vehicle portions (and thus to the non-steered knuckle portion) of the vehicle of Baker et al. as modified by Iizuka et al. with the resilient and direct moving buffer and guide arrangement taught by Nelson, for the purpose of isolating the motor and frame so as to absorb torque reaction of the motor and cushion the motor from shocks and vibrations generated in the drive axle.

6. As regards claims 5 and 6, while the references to Baker and Iizuka teach universal joints (which may function as constant velocity joints for low angular values between input and output), the references do not explicitly teach the joints to be constant velocity joints. It is well known, however, to employ a constant velocity joint in

place of a universal joint for the well known purpose of keeping the incremental input and output velocities as close to one another as possible (rather than only the average velocity summed over a whole rotation as may be had with a universal joint)

Response to Comments

7. Applicant's comments, filed with the amendment and request for continued examination, have been carefully considered. Baker teaches a first knuckle (top of 22) which is connected to a suspension member (suspension yoke 14), where the first knuckle does not turn (by dint of being connected to the suspension yoke and not directly connected to the steered portion, rather connected through a rotatable joint (at 122, 140). As regards the combination with the reference to Iizuka, it is deemed obvious to provide a motor drive as taught by Iizuka et al. for driving the wheels of the vehicle taught by Baker et al. (as already discussed in the rejection above, and which combination applicant does not traverse in the remarks) the combination locating the non-moving portion of the motor so as to be connected to the non-steered portion of the vehicle frame (i.e., the location explicitly suggested by Iizuka et al.).

In the claim amendment, applicant has added the following limitations:

- (1) a recitation that the first knuckle is connected to the suspension member.
- (2) a recitation that the first knuckle does not turn and is locked in a steering direction.

The reference to Baker et al., previously applied, and long of record, teaches both of these limitations:

- (1) the first knuckle portion (top of 22) is connected to a suspension member (14) and
- (2) the first knuckle does not turn (in view of its being connected to 12, 14) and is thus locked in a steering direction.

It is not clear how adding limitations to the claim, where the limitations are taught by a reference which is already being applied against the claims, can serve to meaningfully further prosecution.

Conclusion

8. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618

/Frank B Vanaman/
Primary Examiner, Art Unit 3618